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TITLE:

Aerodynamic investigations of a turbine stage with relatively short blades under varying operating conditions

SOURCE:

Akademiya nauk Ukrayins'koyi RSR. Instytut teploenerhetyky. Zbirnyk prats'. no. 24, 1962. Teploobmin ta hidrodynamika, 91-97

TEXT:

The ratio of mean diameter to blade length in the working wheel was 10.38. The flow parameters were measured before the first directional device, in the gap between it and the working wheel, and behind the working wheel, in seven sections along the channel heights. The air flow rate was constant for different numbers of revolutions. The full pressure remains nearly constant in the core of the stream and drops sharply near the outlet edge. The velocity of rotation did not affect the efficiency of the direction-
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Aerodynamic investigations ...

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al grid. The outlet angles decrease with increasing velocity coefficient. Energy losses are greatest near the blade ends. In the channels of the working wheel a considerable part of the working substance flows from the root towards the end, especially when the velocity of rotation increases. The experimental increase of the axial component of velocity is much larger than the calculated one. The rate of flow through different sections of a thin cylindrical layer of the working substance is not constant. There are 9 figures and 1 table.